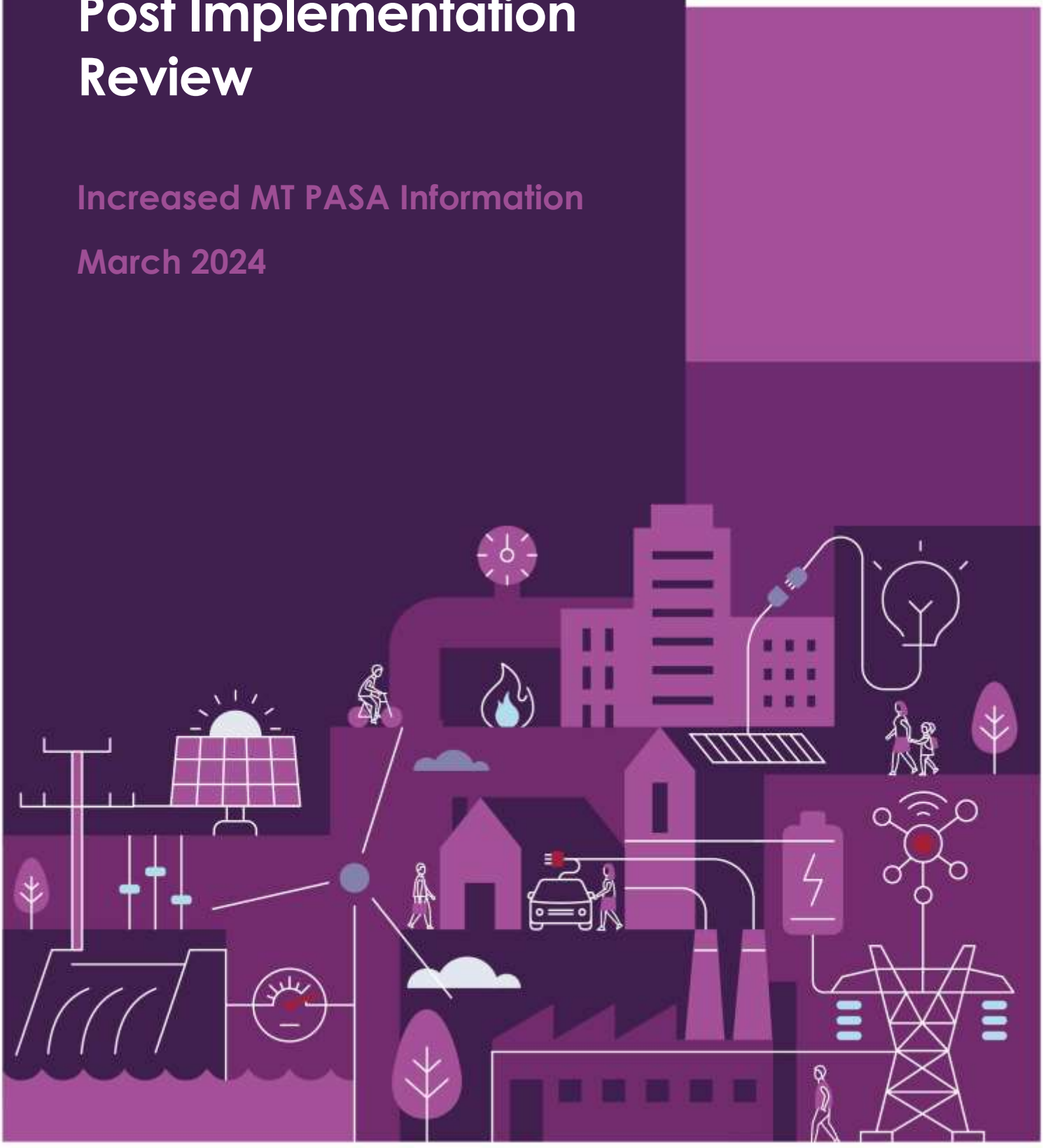
NEM Reform Program Post Implementation Review

Increased MT PASA Information

March 2024



Important notice

Purpose

The purpose of this publication is to not only identify the key learnings and areas for improvement which can be applied across the delivery of future initiatives under the NEM Reform Program, but also consider implementation of the reform against the broader policy or reform objectives, benefits and/or assumptions defined at the time a final rule or policy is made and whether those objectives and benefits have been realised.

This publication has been prepared by AEMO using information available at 28 February 2024.

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Version control

Version	Release date	Changes
#1	4 April 2024	Initial publication

Executive summary

AEMO's post implementation review acknowledges the collaborative effort, time and resources of AEMO and industry in delivering the various initiatives that comprise the NEM Reform Program ('the Program'). It aims to not only identify the key learnings and areas for improvement which can be applied across the delivery of future initiatives under the Program, but also an evaluation against the broader policy or reform objectives, benefits and/or assumptions defined at the time a final rule or policy is made and whether those objectives and benefits have been realised to date. In drafting its assessment, AEMO note i) this reform is part of a broader package defined by the Energy Security Board as part of the Resource Adequacy Mechanism pathway and ii) the benefits of certain reforms may not be apparent from the outset and instead take time to develop or embed within the operation of the market, or participants behaviours. For this reason, a subsequent assessment at a later point in time may be warranted.

Initiative summary

The Increased Medium Term Projected Assessment of System Adequacy (MT PASA) Information initiative was established under the Program to deliver the key changes arising from the *National Electricity Amendment (Enhancing information on generator availability in MT PASA) Rule 2022 No. 7.*[1]

This AEMO initiated rule change, developed as a result of the Energy Security Board's (ESB) Post 2025 Electricity Market Design final advice to Energy Ministers[2] highlighted that a lack of detailed information on generator availability is becoming an issue where it has not been in the past, due to the ongoing transition in the power system.[3] Specifically, the National Electricity Market's (NEM) generation fleet is transitioning towards renewable energy sources, causing changes in the operating regimes of ageing thermal generation plants. As a result of such changes, the challenge of operating the power system to deliver reliable, secure supply is expected to grow.

The Australian Energy Market Commission's (AEMC) final rule determination seeks to address this problem by improving the understanding about why particular generators are unavailable and under what circumstances and how long they would take to come back online.

From 9 October 2023, market generators with scheduled generation units and/or bi-directional units are required to submit to AEMO:

- Unit state in the form of a reason code – to indicate a scheduled generating unit's availability or unavailability and the reason for its availability or unavailability; and
- Unit recall times (for applicable reason codes) – to indicate the period in which the plant could be made available under normal conditions after a period of unavailability.

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[1] AEMC Rule Change – Enhancing information on generator availability in MT PASA. Last Accessed 28 February 2024. Available here: https://www.aemc.gov.au/rule-changes/enhancing-information-generator-availability-mt-pasa

[2] The Increased MT PASA Information initiative was developed as part of the ESB's resource adequacy mechanisms and ageing thermal generation retirement pathway. Energy Security Board. Post-2025 Market Design Final advice to Energy Ministers Part A. 27 July 2021. https://www.datocms-assets.com/32572/1629944958-post-2025-market-design-final-advice-to-energy-ministers-part-a

[3] AEMC Information sheet – Enhancing information on generator availability in MT PASA. Last Accessed 28 February 2024. Available here: https://www.aemc.gov.au/sites/default/files/2022-08/ERC0338%20-%20FD%20Information%20sheet%20-%20Enhancing%20information%20on%20generator%20availability%20in%20MT%20PASA%20-%2018%20August%202022.pdf

Reason codes and recall times are collected and published for the same 36-month timeframe as part of the existing MT PASA process.

Summary of findings

The Increased MT PASA Information initiative became effective from 9 October 2023. This included deployment of AEMO's new interface for participants to submit the required information into the MT PASA process in order to improve the understanding about why particular generators are unavailable and how long it would take for them to come back online.

While the Increased MT PASA Information initiative has only been implemented for six months, the following key points have been observed, to date, from its implementation:

- The initiative was implemented without delays throughout the delivery lifecycle and within the allocated budget (outlined in further detail in sections 3.1 to 3.3).
- Extensive engagement between AEMO and industry throughout the lifecycle of the project resulted in the smooth implementation of the initiative. This included early engagement of the testing team to clarify participants' understanding as well as numerous AEMO demonstrations and interactive sessions to stakeholders on the user interface to minimise issues (outlined in further detail in sections 3.4 to 3.6).
- Medium-term reliability and security problems associated with a lack of consistent, standardised, public information about generator availability have been addressed through the implementation of the initiative with improved functionality now afforded to participants via an API solution which subsequently minimises implementation costs for participants who can utilise AEMO's forward facing Industry Data Exchange (IDX) approach (outlined in further detail in sections 2.2 to 4).

  It is important to note that achievement of addressing reliability and security problems in the medium-term is dependent on participants correctly providing the required information in a timely manner and how stakeholders choose to use the additional information as part of their decision-making process.

  Section 4.1 provides an example of the new data requirements being applied. How other participants respond to this example to address any reliability or security issues that may arise, or to address their own commercial needs as a result, will only be observed in the coming months.

Contents

1 NEM Reform Program

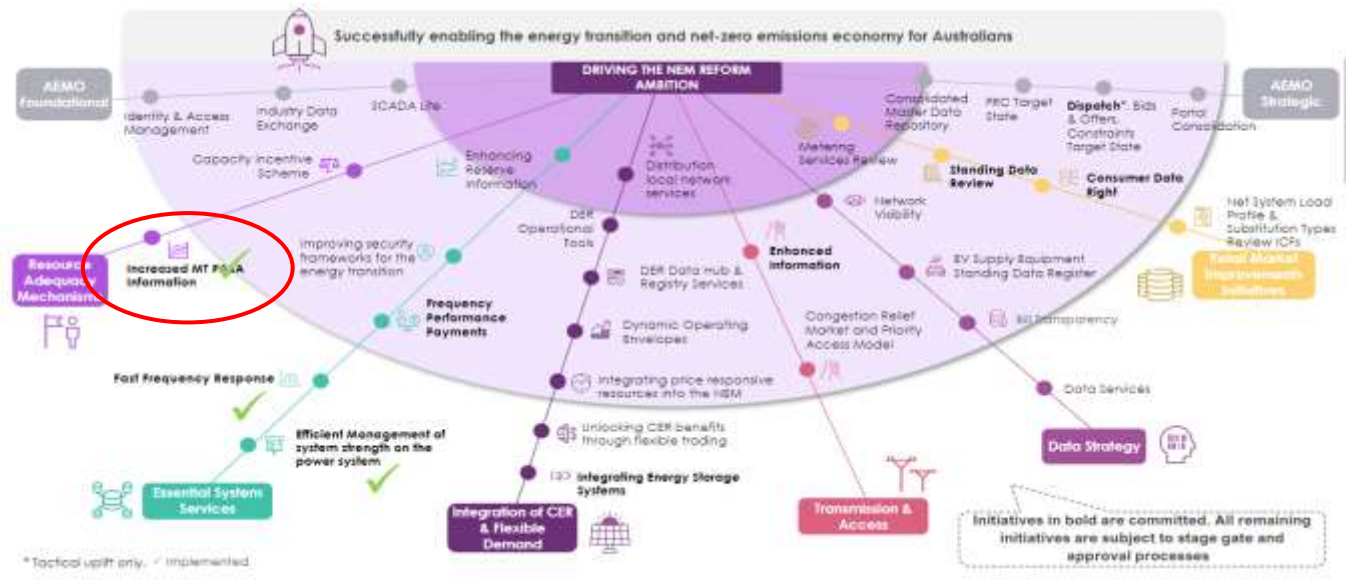
The NEM Reform Program ('the Program') was established by AEMO to collaborate with energy industry participants to deliver many of the Energy Security Board's (ESB) post-2025 reforms along with various other energy market reforms.[4]

The ESB's post-2025 electricity market design set out a pathway to transition the National Electricity Market (NEM) into a modern energy system fit to meet the community's evolving wants and needs and move towards a net-zero future for Australia. The designs sought to address essential change as ageing coal-fired generators are retired, replaced by an expanding array of new technologies, including large-scale renewable energy generation and storage systems, complemented by rapid growth in consumer energy options, including rooftop solar.

The Program is a large-scale, complex, industry-wide program, impacting participants across all areas of the NEM. Each initiative that makes up the Program's scope supports the transition of the NEM and brings Australia closer to a net-zero future.

To manage the implementation of this significant package of reforms and to deliver the best possible outcomes for consumers, the Program works collaboratively with industry participants from across the energy sector. The Program focuses on delivering solutions that meet the reform objectives as efficiently as possible, leveraging opportunities to bundle, sequence and prioritise initiatives within the Program, and where possible identify and drive out costs through solution design and implementation.

Figure 1. NEM Reform Program Scope



AEMO's post implementation review aims to not only identify the key learnings and areas for improvement which can be applied across delivery of future initiatives under the Program, but also an evaluation against the broader policy or reform objectives, benefits and/or assumptions defined at the time a final rule or policy is made and whether those objectives and benefits have been realised.

[4] AEMO NEM Reform Program. Website: https://aemo.com.au/initiatives/major-programs/nem-reform-program

2 Initiative Summary

The Increased Medium Term Projected Assessment of System Adequacy (MT PASA) Information initiative was established under the Program to deliver the key changes arising from the *National Electricity Amendment (Enhancing information on generator availability in MT PASA) Rule 2022 No. 7.*[5]

This rule change was proposed by the ESB as part of its final recommendations to Energy Ministers as an immediate reform under the Resource Adequacy Mechanisms (RAM) pathway to assist in managing orderly exists of existing generation and to increase information disclosure for generators that are taken out of service for extended periods to provide greater transparency of generator availability. It is one of many reforms proposed under the RAM pathway that has been implemented – others under this pathway are still being considered or have not progressed.

AEMO's MT PASA assesses the adequacy of expected electricity supply to meet demand across a two-year horizon through regular assessment of any projected failure to meet the reliability standard. Each week participants must submit forecasts of availability to AEMO for the next 36 months, commencing from the first Sunday after the latest MT PASA run. MT PASA assists Registered Participants and other stakeholders making decisions about supply, demand and transmission network outages over that period. These forecasts form the basis of the MT PASA report that will be produced the following week. The MT PASA process description and the Reliability Standard Implementation Guidelines (RSIG) contain information on how AEMO administers MT PASA process.

On 15 December 2021 AEMO submitted to the Australian Energy Market Commission (AEMC), the Increased MT PASA Information rule change proposal seeking more detailed information be collected and published about scheduled generator availability as part of the MT PASA process. This rule change request arose from the ESB's work which highlighted the need for enhanced transparency of future generator availability and was one of several recommendations, which Energy Ministers agreed to progress.[6]

In raising the rule change request, AEMO noted that as the NEM's generation fleet transitions towards greater renewable energy sources it will drive changes to the operating regimes of ageing thermal generation plants that could lead to several challenges including:

- Reduction in the number of units made available during certain periods of the day or year leading to a potential lack of reserve or essential system services,
- Lack of standardised information making it difficult for AEMO to effectively plan and operate the system,
- Increased complexity in assessment of compliance under the current notice of closure arrangements,
- Limitations on the ability of participants to coordinate maintenance schedules, and
- Weakened investment signals.

[5] AEMC Rule Change – Enhancing information on generator availability in MT PASA. Last Accessed 28 February 2024. Available here: https://www.aemc.gov.au/rule-changes/enhancing-information-generator-availability-mt-pasa

[6] Energy Security Board. Post 2025 Market Design Final Advice to Energy Ministers Part B 27 July 2021. Available here 1629945809-post-2025-market-design-final-advice-to-energy-ministers-part-b.pdf (datocms-assets.com)

On 18 August 2022 the AEMC made a more preferable rule to increase the scope of information gathered via AEMO's MT PASA process from market generators with scheduled generation units and/or bi-directional units. Under this rule change, those market generators are required to share with AEMO:

- Unit state in the form of a reason code – to indicate a scheduled generating unit's availability or unavailability and the reason for its availability or unavailability; and
- Unit recall times (for applicable reason codes) – to indicate the period in which the plant could be made available under normal conditions after a period of unavailability.

Reason codes and recall times would be collected and published for the same 36-month timeframe as part of the existing MT PASA process.

2.1 Impacted stakeholders

The following participant types were impacted by the Increased MT PASA Information initiative:

- Market Generators with Scheduled Generation Units and Bi-directional Units (from June 2024 in line with Integrating Energy Storage System (IESS) rule change commencement); and
- Optional for Transmission Network Service Providers and Scheduled Load participants.

2.2 Initiative scope

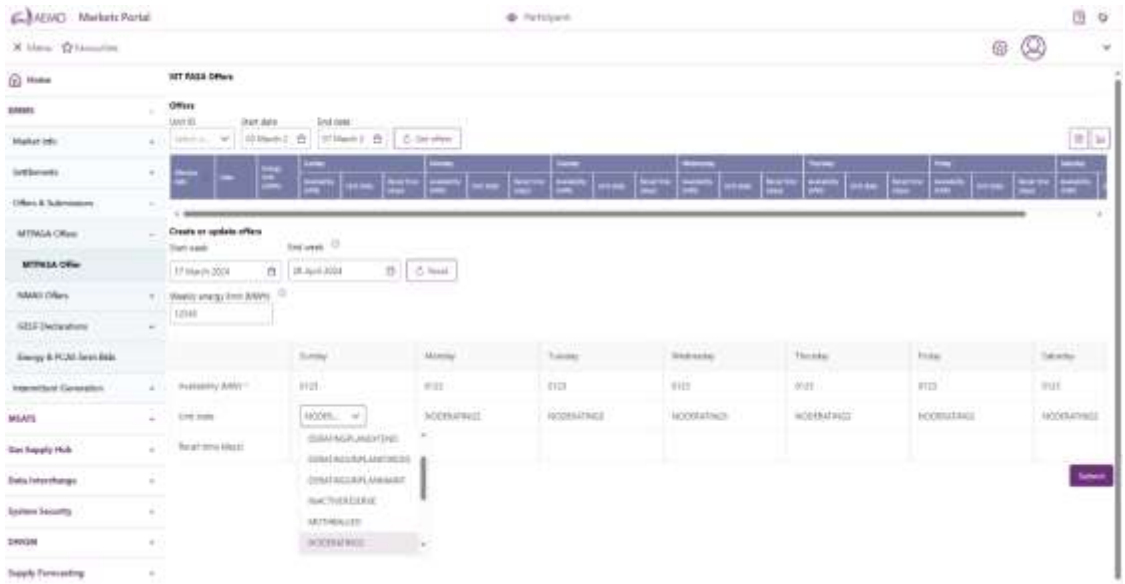
The scope of work implemented via the Increased MT PASA Information initiative included:

Procedures & Guidelines	Market Applications	Market Interfaces
• Consultation and amendments to Reliability Standard Implementation Guidelines (RSIG), and MT PASA Process Description • Consultation and amendment of AEMO's Energy Market Management System (EMMS) Technical Specifications and On-line Help	• Updates to EMMS to accommodate new MT PASA fields and associated queries including: MTPASA_OFFERDATA and MTPASA_DUIDAVAILABILITY reports	• Updates to AEMO's existing MT PASA interfaces to collect additional data (reason codes and recall times) via three channels (FTP, new API and Market Portal). • Extension of EMMS Data Model to support private and public reporting of the expanded MTPASA data
Releases	• MT PASA Software Released on 4th (Supporting updated Offers) and 9th October 2023 (Reporting Activation). • Changes to the EMMS data model required to support the Increased MT PASA Information implementation were released to Preproduction on 20 April 2023 and Production on 23 May 2023. • MT PASA Software Releases 4th (Supporting updated Offers) and 9th Oct (Reporting Activation)	
Industry Testing	• Industry testing for individual participants was held between 28 August and 29 September 2023, including recurring Q&A sessions held twice per week	

The figure below is a sample of the Markets Portal which features the new data requirements. Reason codes can be selected using the 'unit state' drop down menu and 'recall time' can be entered by the number of days.[7]

[7] Appendix A summarises the various unit states and reason codes documented as part of the new Increased MT PASA Information initiative.

Figure 2. MT PASA Offer - Web interface



3 Post Implementation Review

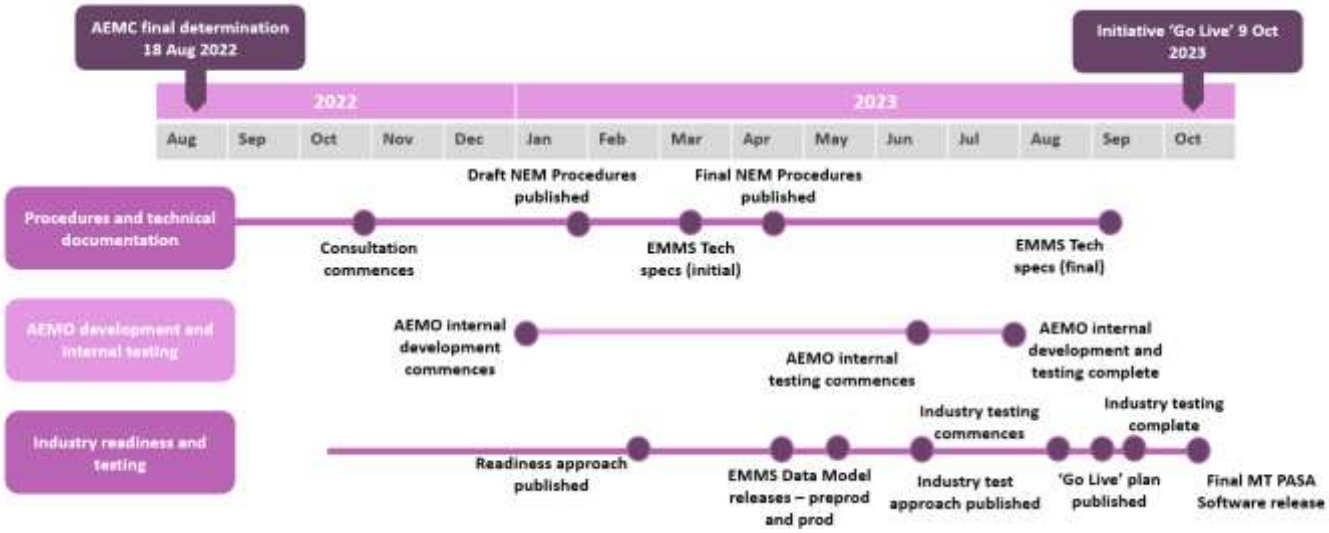
AEMO's post implementation review aims to not only identify the key learnings and areas for improvement which can be applied across delivery of future initiatives under the Program, but also an evaluation against the broader policy or reform objectives, benefits and/or assumptions defined at the time a final rule or policy is made and whether those objectives and benefits have been realised.

In completing this review, AEMO note not all objectives / benefits may be realised from day one (1) of an initiative being delivered. For certain initiatives, this may require further assessment at a later point in time in which the market and its participants / stakeholders have had ample opportunity to engage or participate (e.g., where a new market service has been established), or access to new data fields.

3.1 Delivery on time

AEMO and market participants collaboratively delivered the Increased MT PASA Information initiative on time with no delays throughout the delivery lifecycle and were therefore able to meet the go-live date of 9 October 2023 as stated in the AEMC's final determination. This included sufficient time allowed for industry engagement and testing. The figure below sets out key milestones met by both AEMO and industry participants, from the AEMC final determination on the rule change to implementation of the initiative.

Figure 3. Delivery timeline



3.2 Delivery of scope

The Increased MT PASA Information initiative delivered the scope established as part of the final rule determination. The project scope included updates to existing IT systems, implementation of new IT solutions (API), as well as updates to business processes, industry procedures / guidelines, stakeholder engagement and industry readiness activities.

3.3 AEMO implementation costs

The Increased MT PASA Information initiative was delivered within AEMO's allocated budget as shown in Table 1.[8] The actual costs of the Increased MT PASA Information initiative will be recovered through AEMO's new NEM2025 Reform Program fee, with recovery from Wholesale Participants (27.5%) and Market Customers (72.5%).[9] Cost recovery for this initiative commences from 1 July 2024 and will continue for a period of seven years.[10]

Table 1. AEMO Implementation Costs

Budget	Actual	Variance
$1,450,634	$1,293,321	$157,313

3.4 Uplift, optimisation and / or taking costs out for industry

As part of the initiatives scope, AEMO developed a new API providing for an alternative method of collecting additional participant data. The API is a superior IT solution for participants and improves on the limitations of file-based communications. The API has the capacity to reduce industry costs going forward through rationalising participants IT support and development costs.

3.5 AEMO and industry readiness

AEMO engaged extensively with industry prior to the initiative go-live date to ensure successful integration of the required changes into its own, and participants systems. An indication of the positive impact of AEMO's extensive industry engagement prior to the initiative's go-live date can be evidenced from the fact that 188 of 189 DUIDs had submitted the MT PASA files (with the additional data required) successfully on day1. Further, there were no post-production defects reported, which can again be attributed to AEMO's and participants engagement prior to go-live and during any transitions.[11]

To support integration, AEMO developed and implemented the following plans ahead of the agreed go-live date.

3.5.1 Readiness approach plan

The Readiness approach plan communicated to industry the framework NEM Reform initiatives (including the MT PASA initiative) adopt for the 'readiness approach'. Specifically for the Increased MT PASA Information initiative, the plan outlined:

[8] Note these costs do not cover the costs incurred by participants associated with implementation of the initiative.

[9] AEMO's Final Determination on the Participant fee structure for the NEM2025 Reform Program declared NEM project was published on 6 October 2023 and is available on AEMO's website: AEMO | Participant Fee Structure for the NEM2025 Reform Program Declared NEM Project

[10] As other initiatives within the NEM2025 Reform Program declared NEM project go live, they too will be rolled into this fee structure.

[11] Refer to slide 17 from AEMO's NEM Reform Implementation Forum, Meeting #16 on 31 October 2023.

- Initiative Readiness Criteria – The criteria for decision making on readiness for the initiative to go-live in line with rule commencement timeframes and the efficient operation of the NEM, this also includes industry notification criteria.
- Initiative Readiness Reporting – The form of reporting required by participants to meet the go-live criteria decisions, as well as AEMO's progress reporting approach.
- Initiative Industry Testing – The expected approach to the conduct of Industry testing as well as the release testing requirements / considerations (to be validated with industry as part of the Industry Test Strategy development).
- Participant Development Support – The approach to the provision of technical and functional support for participants in their implementation of the initiative, which is guided by the initiative impact assessment view on scale of change and spread across participant categories.
- Transition Support – The approach to the activities required to transition into operation, including a longer-term transition and go-live (cutover) period to manage the scope and timing of required transitional activity.

3.5.2 Industry go-live plan

The Industry go-live plan outlined activities and dates for the MT PASA 2023 release. Specifically, the scope of the go-live plan framework included:

- Deployment of Wholesale system changes to support changes to MT PASA.
- Deployment of EMMS 5.2 Data Model.
- Communications during deployment.
- Support arrangements during the go-live period.

3.5.3 Industry test approach plan

AEMO's Industry test approach plan provided a timeline of milestones and (progress to date) for the MT PASA system changes as well as an indicative participant impact assessment from affected market systems and processes including registration, bidding and dispatch, retail and metering, and settlements.

3.6 Stakeholder feedback

AEMO received positive feedback throughout the implementation of the Increased MT PASA Implementation initiative on its approach to engagement and collaboration with industry. In particular the following were considered beneficial by stakeholders:

- The demonstrations of the user interface (UI) and a very responsive industry testing team.
- The timeliness of responses from the resolver team to participant queries.
- The Q&A sessions having key persons from the project, (PM, business SME, IT/Digital, testing, Helpdesk) all included, ensured that answers were provided in the session in most instances and followed up by close of day.
- Updates to the FAQ site and provision of user guides for 'Service Now'.

3.7 What worked well?

The following key themes were identified as aspects of implementation that worked well:

- *Scope & timelines* – The project scope was implemented on time and within budget, with no significant issues faced over the life of the project. This was supported by the early release of key deliverables (e.g., EMMS 5.2 Data Model) and consistent reporting against external milestones.
- *Engagement* – The project team engaged extensively both internally and externally through the lifecycle of the project. Early engagement of the test team allowed for additional time for users to clarify their understanding. Further, AEMO encouraged participants to be actively involved in procedural and technical changes. This was achieved with good quality responses and turn outs from participants during procedure reviews and Q&A sessions and use of 'Service Now' was an efficient means of managing participant queries, volumes and recording responses. AEMO provided demonstrations and interactive sessions to stakeholders on the user interface which minimised issues during the testing stage.
- *Uplift* – AEMO developed a new API through this initiative, which is a superior IT solution to participants compared to file-based communications. The initiative also introduced improved security controls through all interfaces, which resulted in improved software quality and application performance, design documentation and test cases for regression.

3.8 What areas could be improved?

Increased MT PASA Information initiative is modest in size and scope relative to other initiatives (to be) delivered under the Program. The initiative was implemented smoothly with no real issues.

4 Policy Objectives & Reform Value Assessment

In this section AEMO provide an assessment against the stated policy objectives and reform value as documented in the AEMC's final determination *National Electricity Amendment (Enhancing information on generator availability in MT PASA) Rule 2022 No. 7*. In drafting its assessment, AEMO note (i) this reform is part of a broader package defined by the ESB as part of the Resource Adequacy Mechanism pathway; and (ii) the benefits of certain reforms may not be apparent from the outset and instead take time to develop or embed within the operation of the market, or participants behaviours. For this reason, a subsequent assessment at a later point in time may be warranted.

Table 2. AEMC reasons for making the rule

Policy objective / value[12]	Assessment
Addresses the reliability and security problems associated with a lack of consistent, standardised, public information about generator availability over the medium term	The Increased MT PASA Information initiatives has provided for the standardisation collection and reporting of data in relation to unit availability over the medium term. This data is accessible and publicly available via AEMO's website to all participants and industry stakeholders.
Better informed and efficient decision making and thus reliability at a lower cost to consumers	The additional information allows for stakeholders to gain a better understanding about the risks of future supply shortfalls and potential mitigating actions. For example, participants can more effectively coordinate maintenance schedules, and investors can assess opportunities for replacement plant. The improved information also supports the AER's monitoring and compliance under the current notice of closure arrangements. Similarly, AEMO may leverage the information provided by participants as part of its ongoing planning and operational activities including its assessment of system reliability over the medium term. Finally, the additional information provides policy makers and other market bodies the ability to identify the reasons more clearly for the decisions of participants, and therefore develop regulatory or policy action/s to better address any perceived issues. It will also allow for more granular analysis to be performed to inform a variety of decisions by other interested stakeholders.
Costs minimised through implementation process	The costs for AEMO were largely upfront costs to change systems and processes and to consult on and update relevant guidelines and procedures. AEMO has been able to minimise the costs of implementation as highlighted in Section 3.3, coming in under budget. Additionally, costs to industry are minimised through implementation due to the flexibility provided to AEMO to determine the minimum number of reason codes and which reason codes must be accompanied with recall times, through the standardised API solution (outlined in Section 3.4 above) that allows participants to utilise a more forward facing Industry Data Exchange (IDX) approach.

[12] AEMC Rule Change – Enhancing information on generator availability in MT PASA. Last Accessed 28 February 2024. Available here: https://www.aemc.gov.au/rule-changes/enhancing-information-generator-availability-mt-pasa

4.1 Reform in action

On 5 February 2024, Engie informed AEMO and the market of its decision to shut down two of its diesel power stations in South Australia, Snuggery Power Station (63 MW) and Port Lincoln Power Station (75 MW) from 2027, three years earlier than originally planned due to economic and commercial reasons.[13] In announcing its decision, Engie also signalled its intention to mothball both power stations from 1 July 2024.

These closures were communicated to AEMO and the market in accordance with the Notice of Closure obligations under the Rules, and through the respective MT PASA bids for each unit. As per the additional information requirements that resulted from the AEMC's final determination *National Electricity Amendment (Enhancing information on generator availability in MT PASA) Rule 2022 No. 7*, Engie submitted a reason code "Mothballed" and recall time of "90 days" for both power stations as per Figure 4 and Figure 5 below.

Figure 4. Snuggery Power Station – MT PASA Submission (5th vs 6th February)

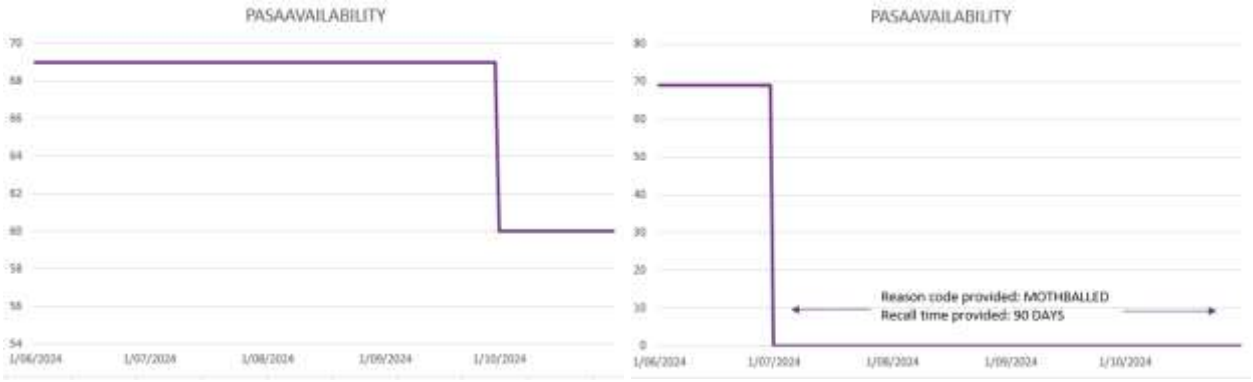


Figure 5. Port Lincoln Power Station – MT PASA Submission (5th vs 6th February)

As a result of Engie's recent decision to shut down the power stations earlier than planned, the reliability impacts in South Australia will need to be reassessed by AEMO. Similarly, Engie's decision may subsequently lead to other market participants adjusting their units' availabilities in MT PASA (for commercial or operational reasons) to account for any reliability implications or market opportunities that may now eventuate, or to even consider implications should market conditions change and Engie decide to return one or both power station to service.

[13] For further information, see article from the Australian Financial Review (AFR) *Engie to shut two South Australian generators as losses mount*, and article from Renew Economy: *Diesel power stations to close as big batteries take centre stage | RenewEconomy*

It is important to note that achievement of addressing reliability and security problems in the medium-term is dependent on participants correctly providing the required information in a timely manner, and how participants choose to use the additional information as part of their decision-making process.

Appendix A – Unit States and Reason Codes

Table 3 lists the unit states, the shortform codes that are used for data entry, whether the unit state is associated with an economic or physical outage, and whether an accompanying unit recall time must be provided as documented in AEMO's MT PASA Process Description.[14] A recall time requirement of 'mandatory if available' means that a recall time must be provided if the unit is recallable.

Table 3. List of unit states, shortform codes, economic/physical reason, and recall time requirements

Unit State	Shortform Code	Reason for outage	Recall time requirements (days)
Inactive reserve	InactiveReserve	Economic	Mandatory
Mothballed	Mothballed	Economic	Mandatory
Retired	Retired	Economic	None
No deratings	NoDeratings	N/A	None
Basic planned deratings	DeratingPlanBasic	Physical	Mandatory if available
Extended planned deratings	DeratingPlanExtend	Physical	Mandatory if available
Unplanned forced deratings	DeratingUnplanForced	Physical	Mandatory if available
Unplanned maintenance deratings	DeratingUnplanMaint	Physical	Mandatory if available
Basic planned outage	OutagePlanBasic	Physical	Mandatory if available
Extended planned outage	OutagePlanExtend	Physical	Mandatory if available
Unplanned forced outage	OutageUnplanForced	Physical	Mandatory if available
Unplanned maintenance outage	OutageUnplanMaint	Physical	Mandatory if available

The following IEE762-2006 definitions apply to each of the unit states listed.

[14] AEMO MT PASA Process Description. Version 6.4. Available here https://aemo.com.au/-/media/files/stakeholder_consultation/consultations/nem-consultations/2023/reliability-forecasting-guidelines-and-methodology-consultation/final/mt-pasa-process-description.pdf?la=en

Table 4. Unit state definitions consistent with IEE762-2006

Unit State	Definition
Inactive reserve	Unavailable for service but can be brought back in a relatively short period of time, typically measured in days
Mothballed	Unavailable for service but can be brought back with appropriate notification, typically weeks or months
Retired	Unavailable for service and not expected to return to service in the future
No deratings	Available with no deratings, or only seasonal deratings
Basic planned deratings	Planned derating as originally scheduled and with a predetermined duration
Extended planned deratings	Planned derating that is an extension of the basic planned derating beyond its predetermined duration
Unplanned forced deratings	Unplanned derating that cannot be deferred beyond the end of the next weekend
Unplanned maintenance deratings	Unplanned derating that can be deferred beyond the end of the next weekend but required before next planned derating
Basic planned outage	Planned outage as originally anticipated and with a predetermined duration
Extended planned outage	Planned outage that is an extension of the basic planned outage beyond its anticipated duration
Unplanned forced outage	Unplanned outage that cannot be deferred beyond the end of the next weekend
Unplanned maintenance outage	Unplanned outage that can be deferred beyond the end of the next weekend but required before next planned outage